

Aviation Weather Research: What Is Being Done to Improve Safety and Reduce Delays?

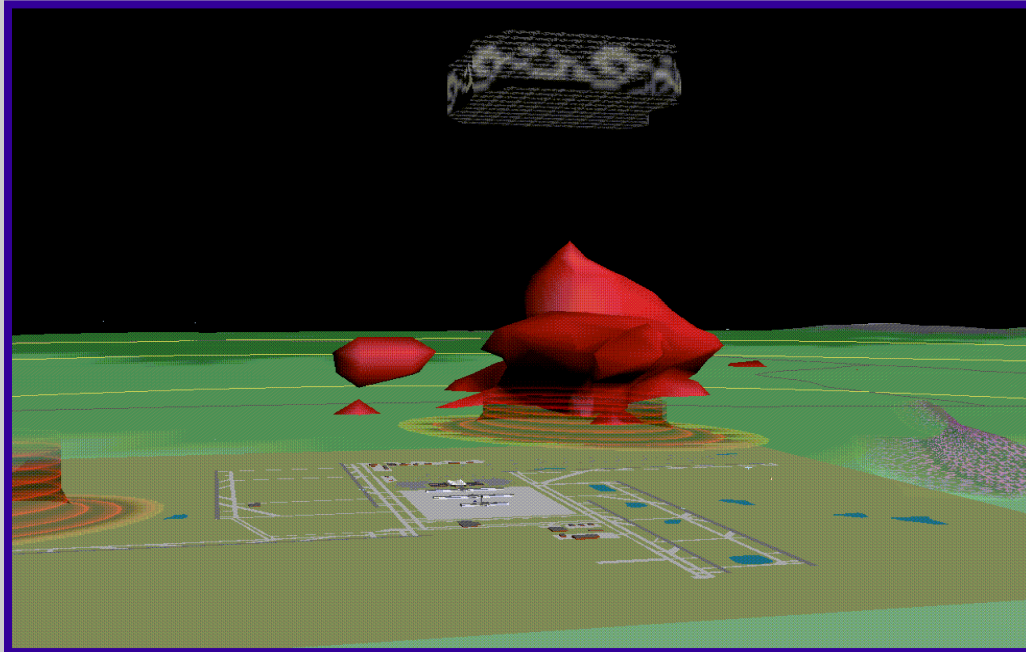
A Collaborative Approach

Government and Universities

Federal Aviation Administration
National Aeronautics and Space Administration
Department of Defense
National Oceanic and Atmospheric Administration
National Center for Atmospheric Research
Lincoln Laboratories

Industry

ARINC
Honeywell
Coherent Technologies
Teledyne
Rockwell Collins
Boeing
United Airlines
Northwest Airlines
American Airlines
Delta Airlines
Alaska Airlines
Atlantic Coast Airlines
U.S. Airways
Air Wisconsin
Comair
Skywest Airlines

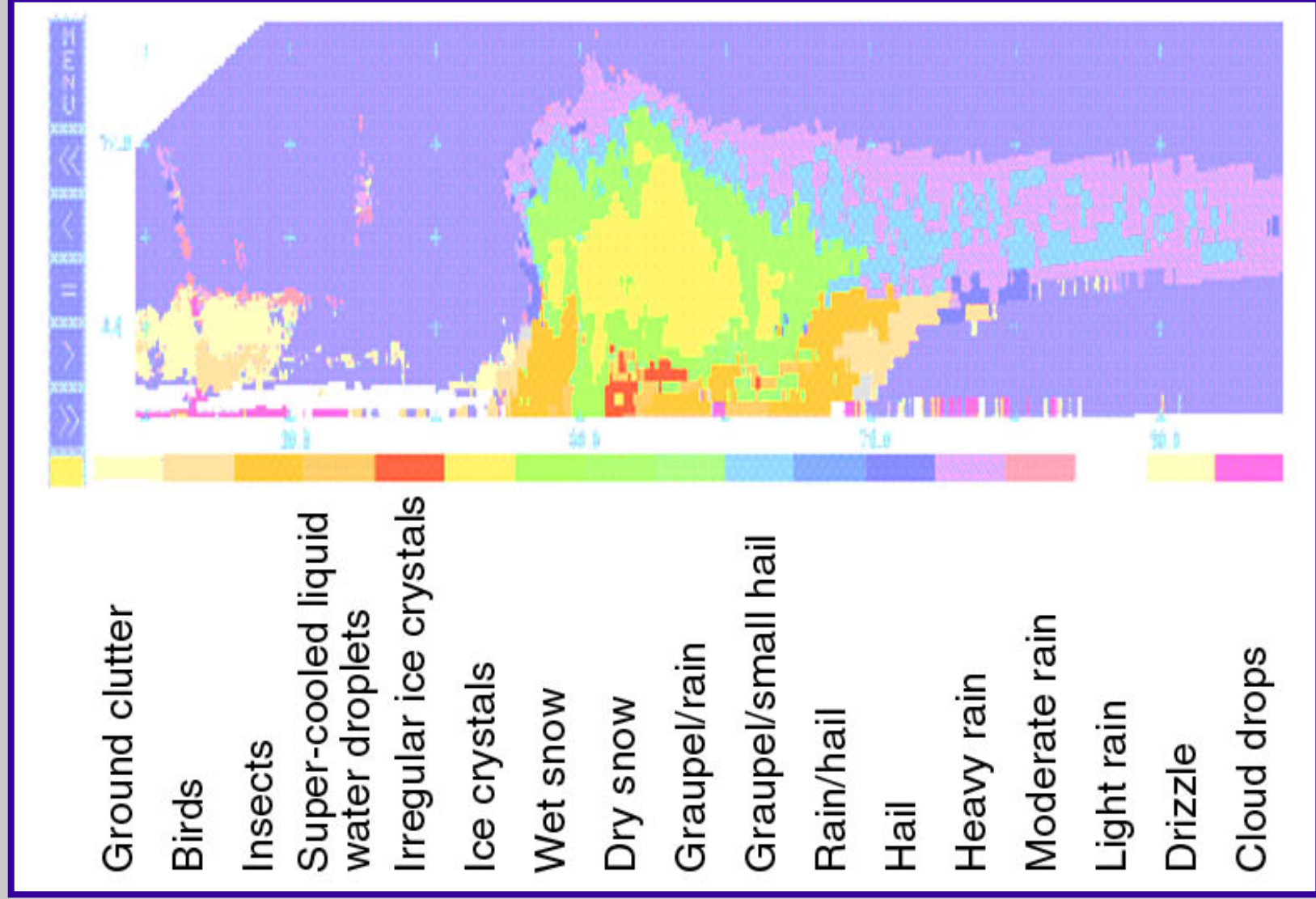


Thunderstorms

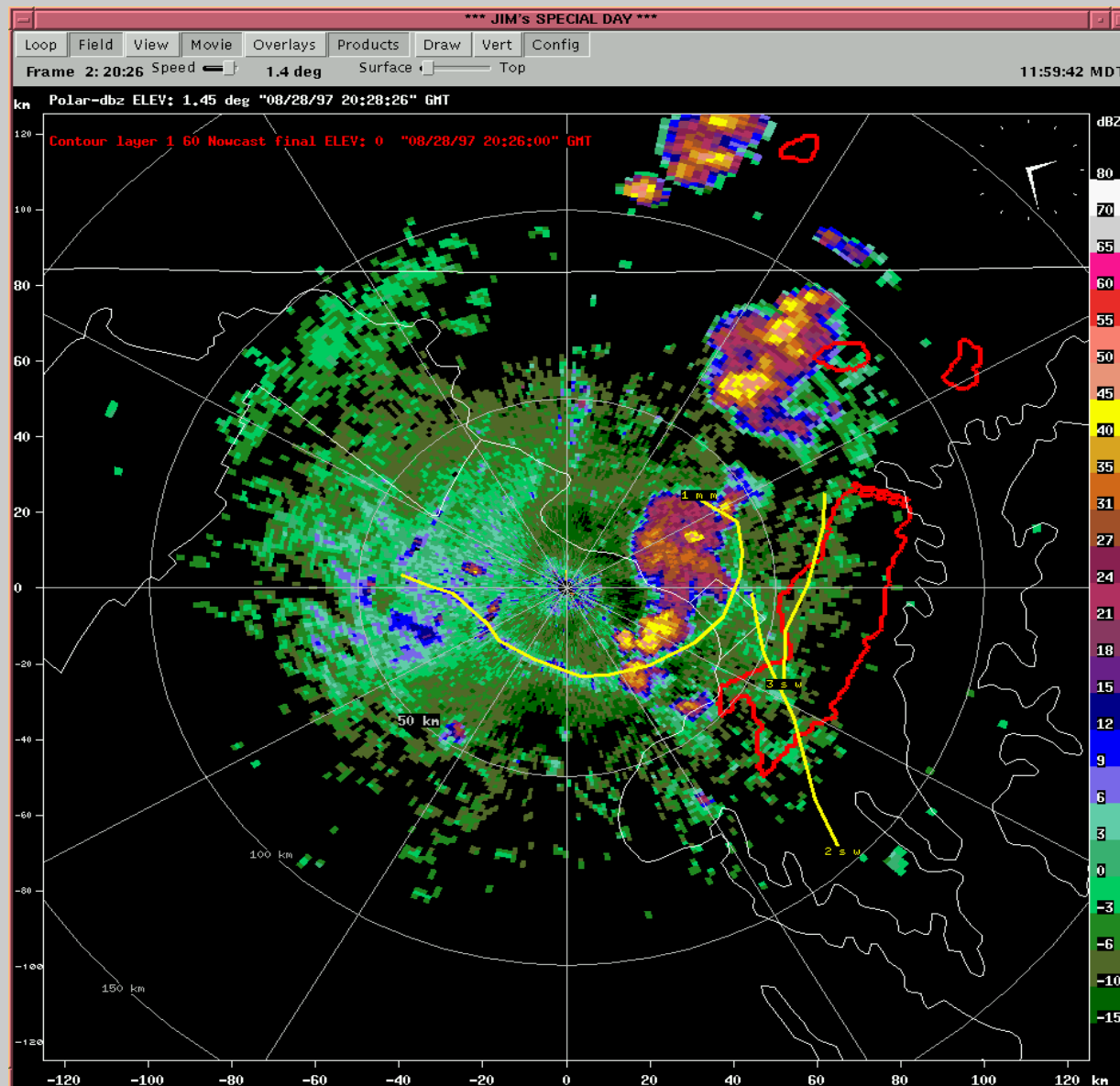
Cause Accidents and Delays



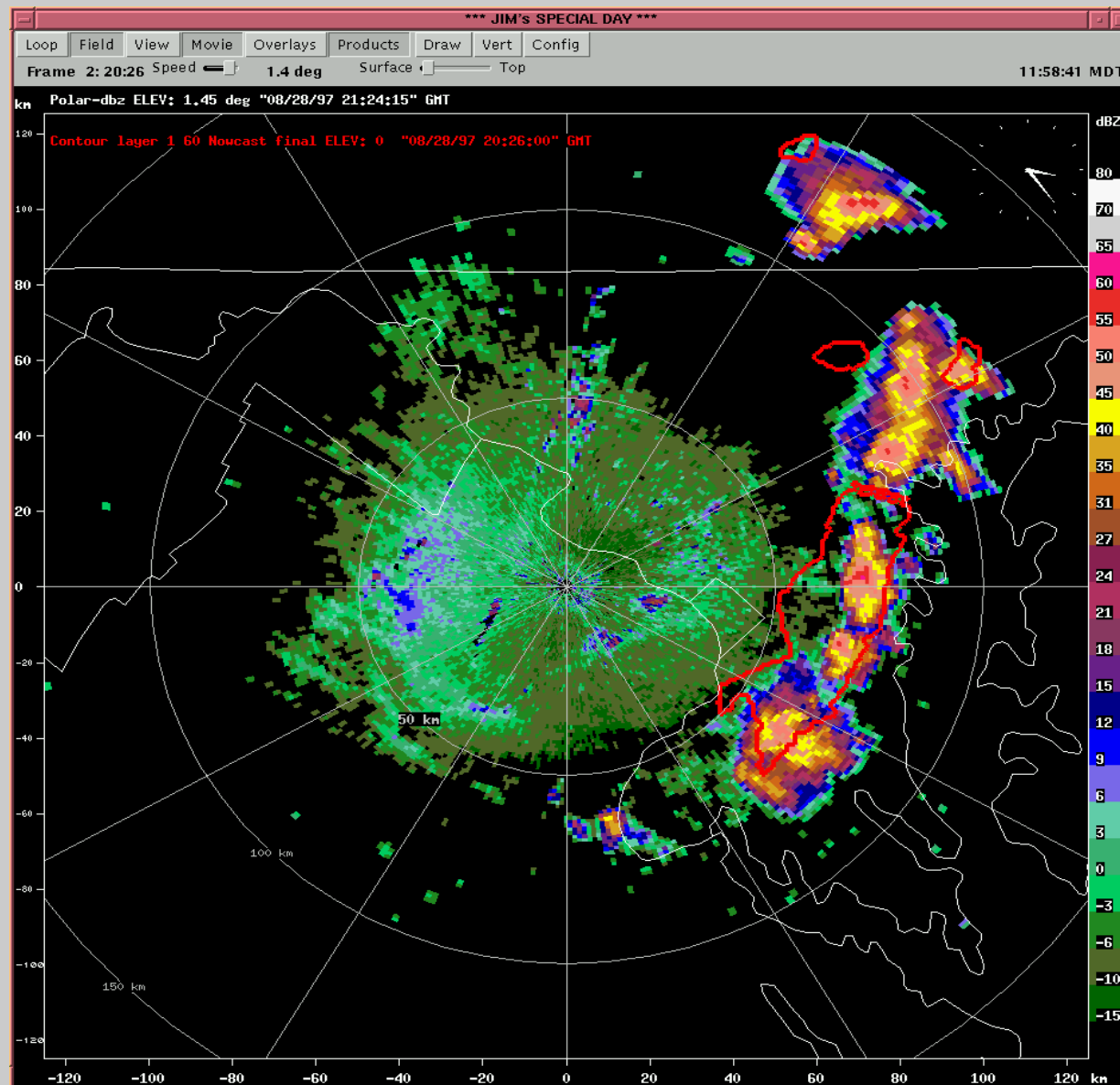
New Radar Technology Identifies Type of Reflectors



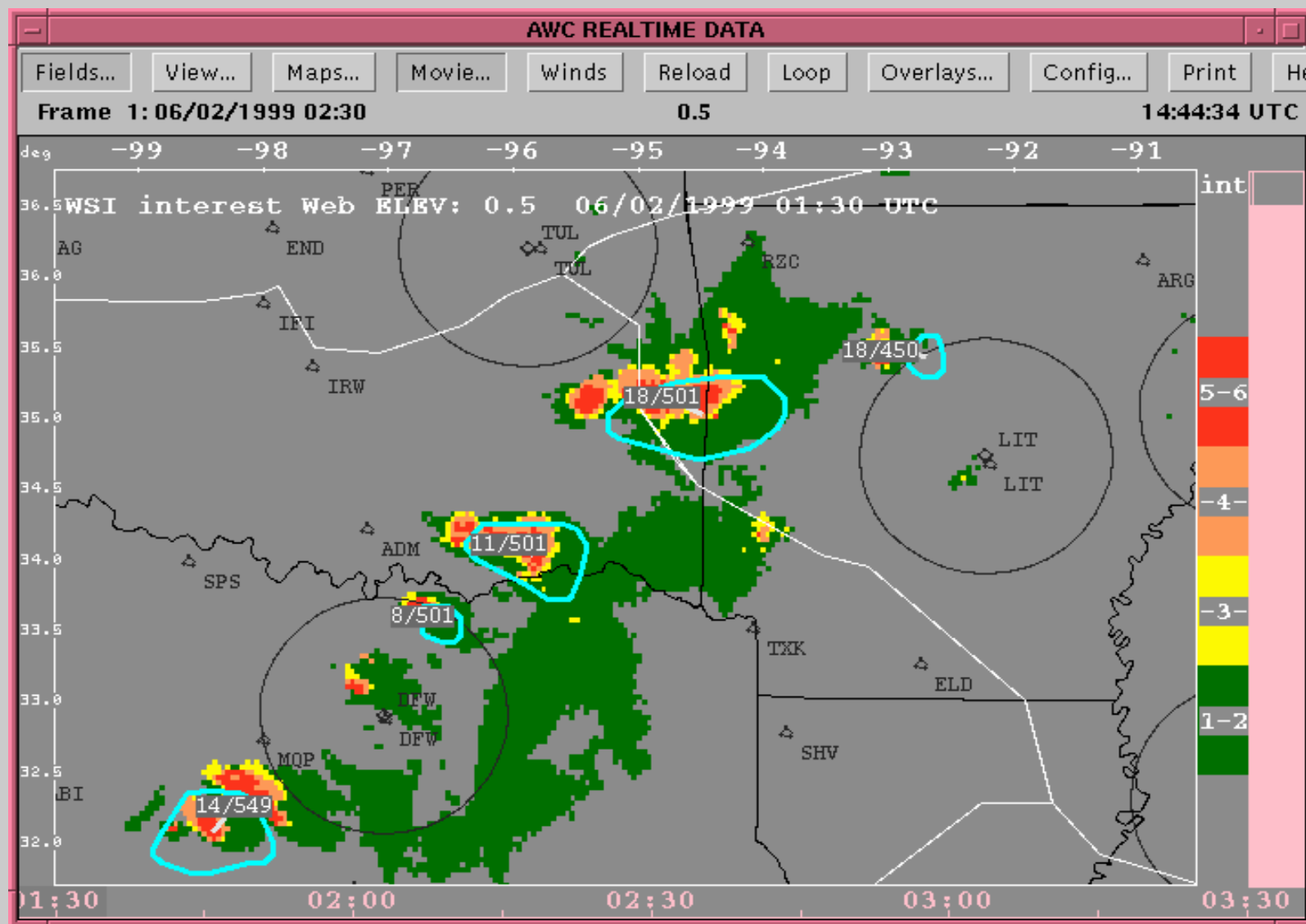
Automatic Data Fusion Provides One-Hour Thunderstorm Forecast



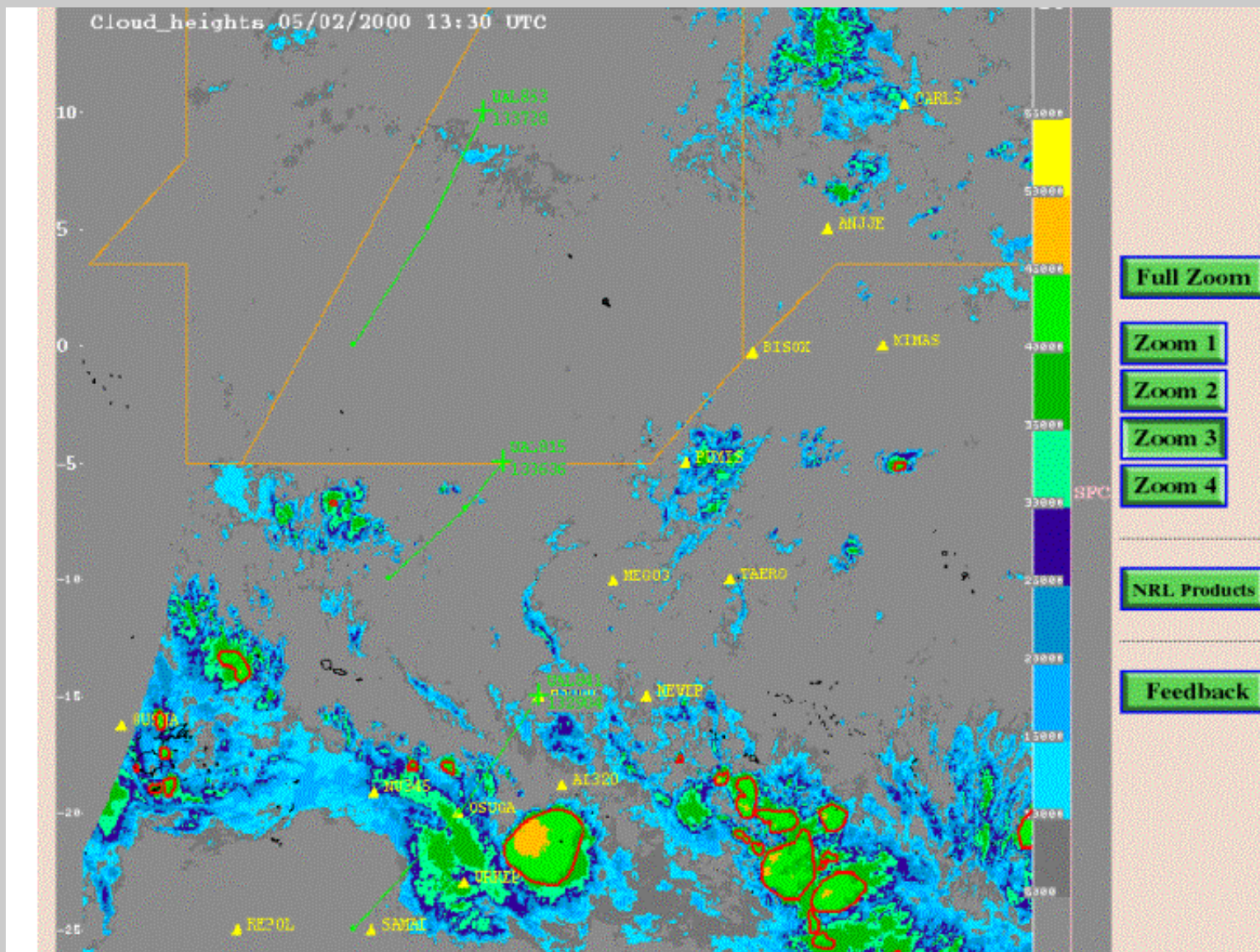
Automatic Data Fusion Provides One-Hour Thunderstorm Forecast



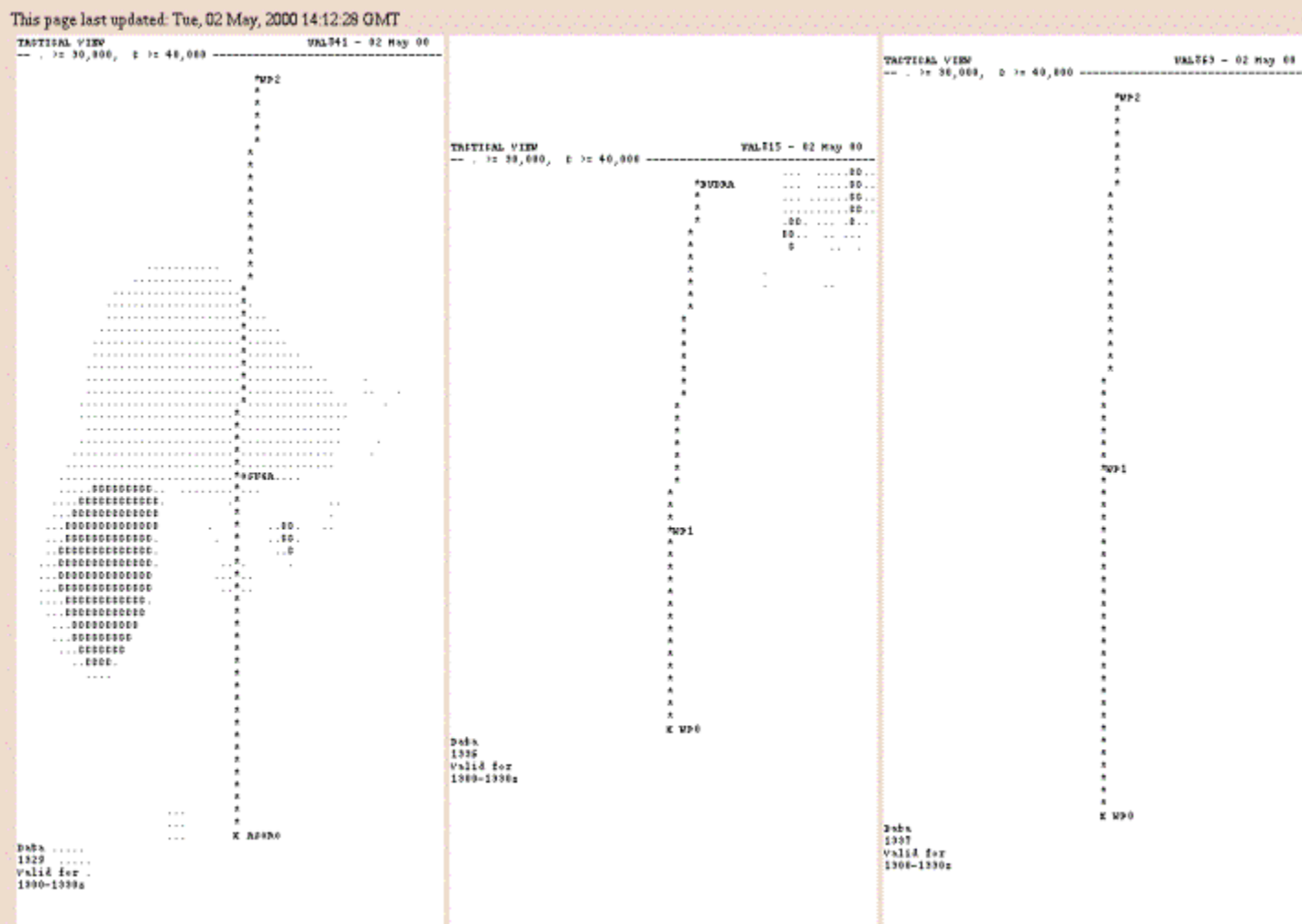
Forecast for Little Rock Accident Provides Ample Warning



Nowcast of Oceanic Thunderstorms Alerts Dispatcher, Controller, and Pilot

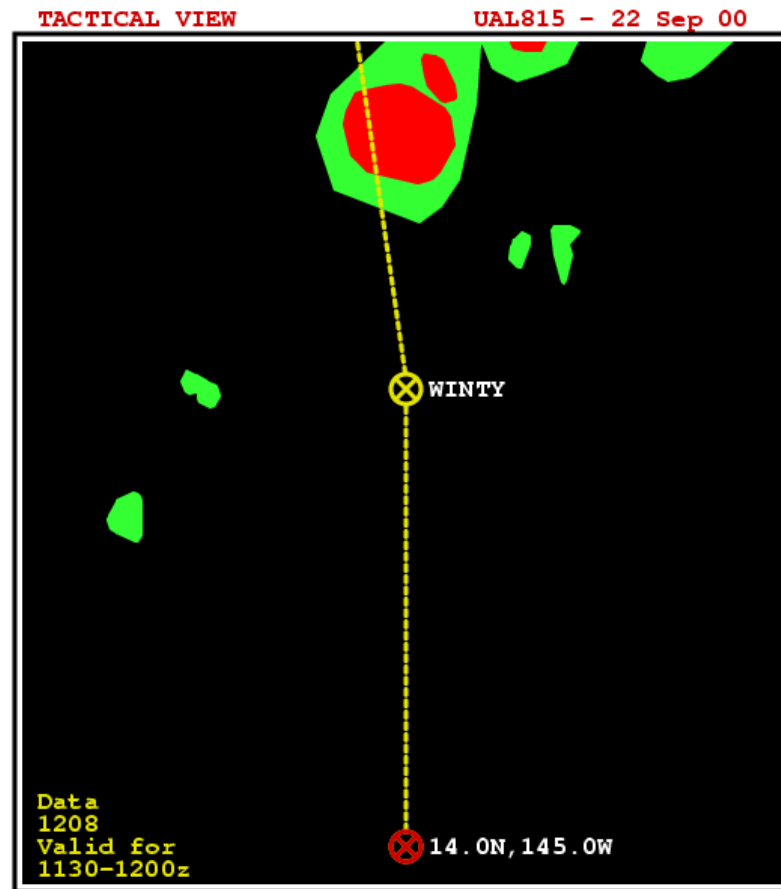


Nowcast of Oceanic Thunderstorms Alerts Dispatcher, Controller, and Pilot



The displays on this page are generated automatically when new position reports are received from ARINC. When a position report is received for an existing flight, the newly generated display replaces the old one on this page. If a display becomes more than 2 hours old it is removed from this display under the assumption that the flight is no longer active, and even if it is still active the

Nowcast of Oceanic Thunderstorms Alerts Dispatcher, Controller, and Pilot



Turbulence

**Injures Cabin Crew and
Frightens Passengers**

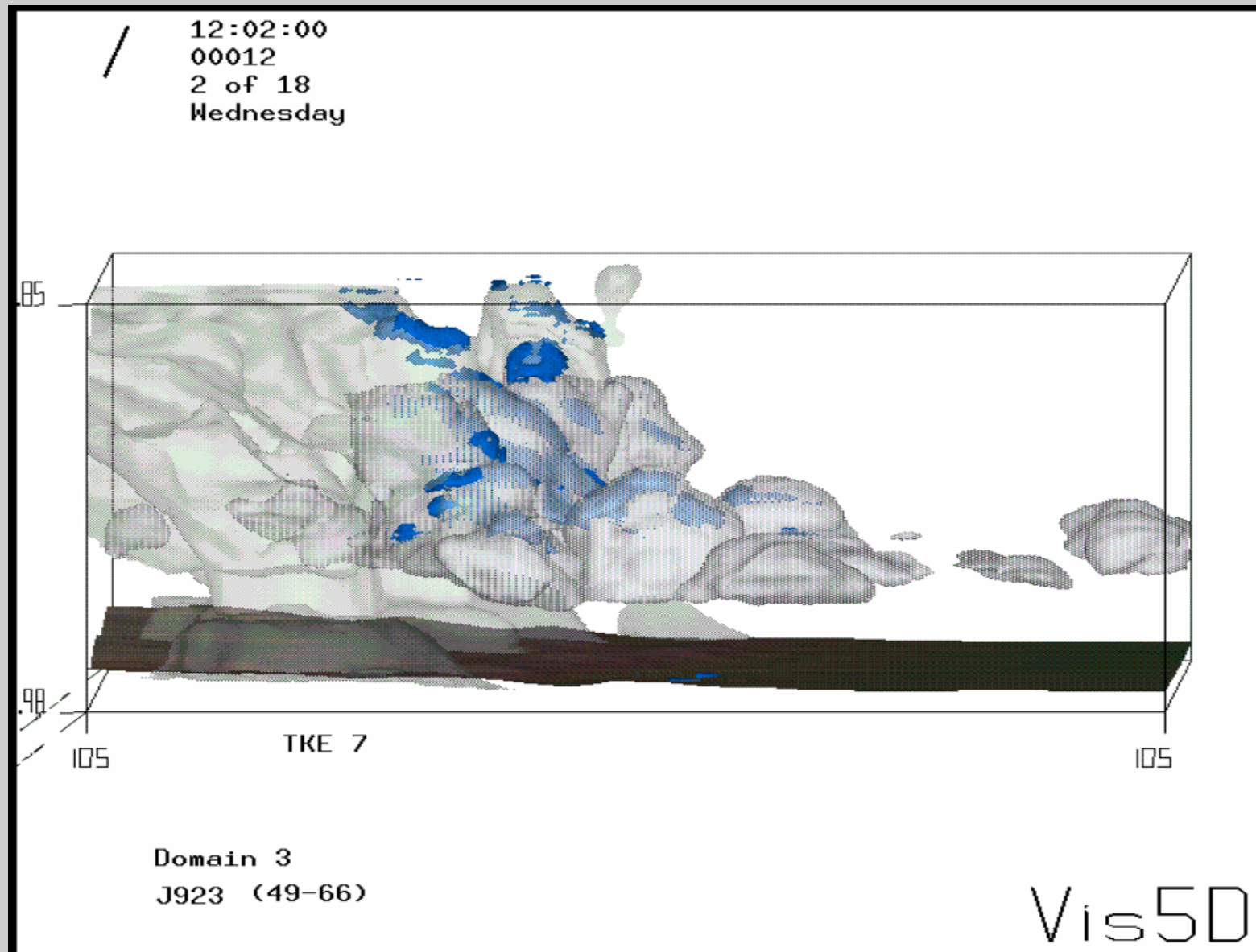


Improved On-Board Sensors Will See Turbulence Near Thunderstorms



(mostly) Greg Thompson

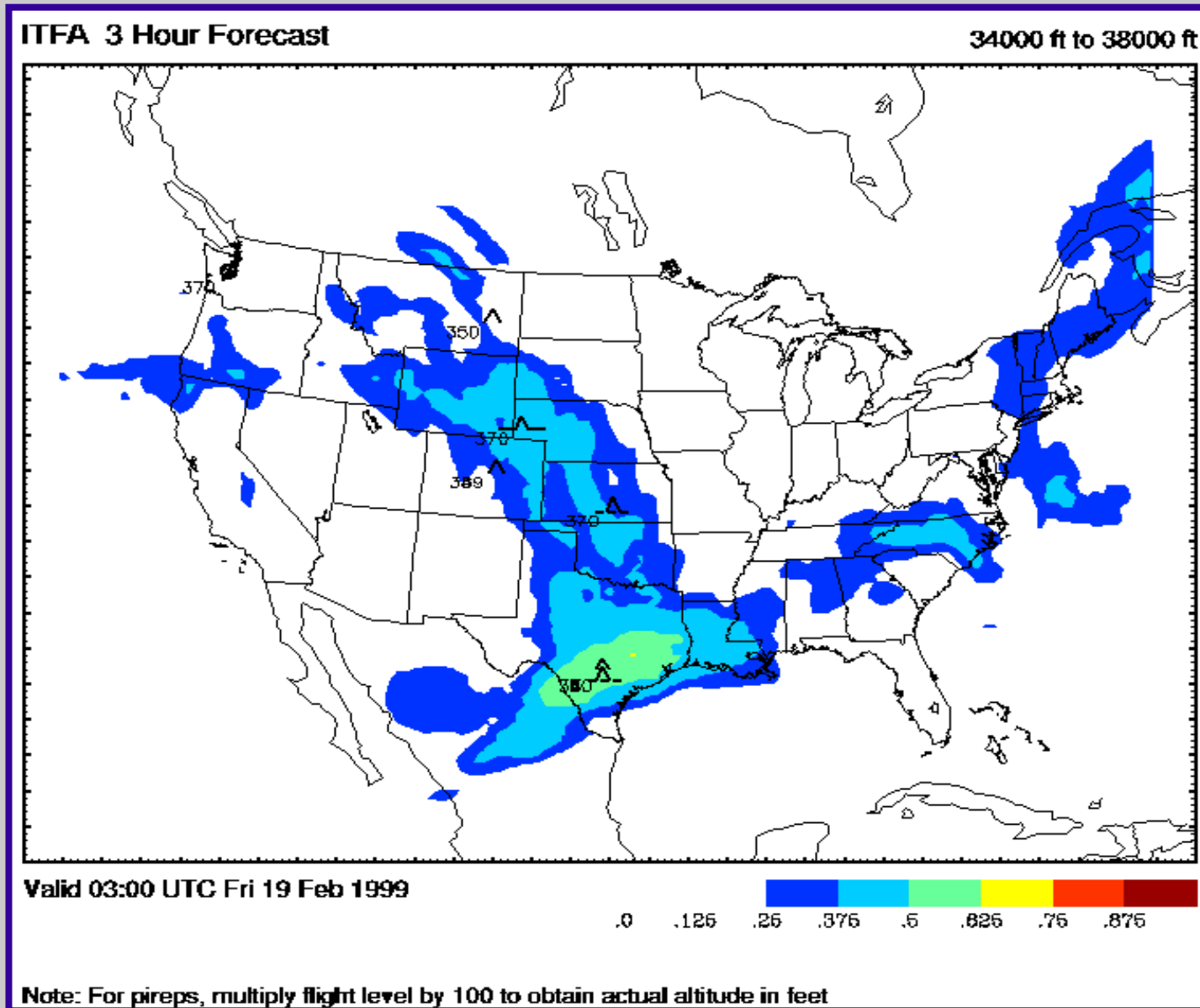
Powerful Modeling Techniques Are Providing Information About Turbulence in Thunderstorms



Clear-Air Turbulence (CAT) is More Difficult to Detect



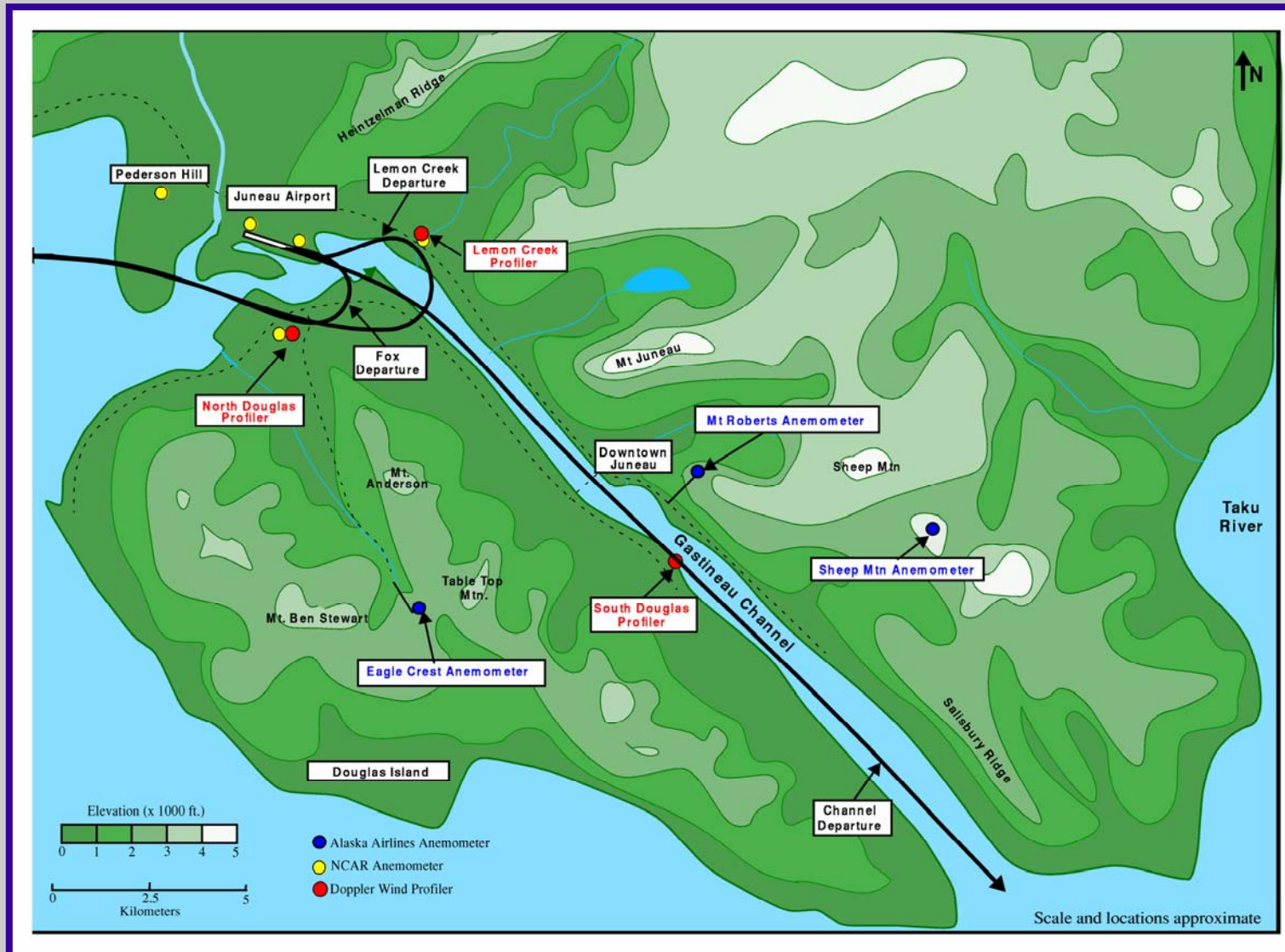
Advanced Data Fusion Provides Improved Forecast of CAT



High Winds Over Terrain Cause Problems at Many Locations








Terrain-Induced Turbulence Is Common at Juneau



FAA Is Developing an Alerting System to Improve Juneau Operations

Bookmarks Location: <http://ucar.klukwan.com/JuneauOps.html> What's Related

 **Juneau Wind and Ops Information**    

02 Mar 2000 00:24 UTC 15:24 AST (01 Mar 2000)

Latest Anemometer Observations

Station	Elevation	Time (UTC/AST)	Average Dir / Speed	Peak Speed	Temperature (°F)	Humidity
Eagle Crest	2620 ft	00:24 / 15:24	061 / 18	22	30	98%
Sheep Mountain	3540 ft	00:24 / 15:24	002 / 16	17	24	99%
Mt Roberts Tram	1760 ft	00:24 / 15:24	034 / 20	23	33	99%
Pederson Hill	490 ft	00:24 / 15:24	236 / 3	4	-	-
Center Field	30 ft	00:24 / 15:24	098 / 8	9	-	-

Elevations in Feet MSL, Direction in Magnetic, Speed in knots.

Table updated 02-Mar-2000 00:24 UTC (01-Mar-2000 15:24 AST)

Part 121 Ops Spec Departure Alerts

00:24 UTC / 15:24 AST

Fox - NO GO
RW headwind speed below min

Lemon Creek - NO GO
RW headwind speed below min

RNP 08D 08A 26A - GO

Table updated 02-Mar-2000 00:24 UTC (01-Mar-2000 15:24 AST)

Runway Winds

Runway	HeadWind	CrossWind
08	8	2
26	-8	2

Latest Profiler Wind Observations

Dir / Speed	North Douglas	Lemon Creek	South Douglas
Elev / Time	00:20 UTC 15:20 AST	00:20 UTC 15:20 AST	00:20 UTC 15:20 AST
6000 ft	124 / 34	118 / 31	126 / 33
5000 ft	106 / 30	107 / 26	110 / 24
4000 ft	088 / 26	095 / 25	101 / 19
3000 ft	079 / 24	088 / 18	093 / 19
2500 ft	077 / 23	076 / 11	086 / 20
2000 ft	077 / 21	064 / 10	080 / 19
1500 ft	075 / 18	049 / 11	068 / 17
1000 ft	068 / 15	044 / 17	060 / 15
500 ft	060 / 13	042 / 19	058 / 15

Latest Images from Pederson Hill

0:00:03 NORTH

0:00:10 EAST

0:00:15 SOUTH

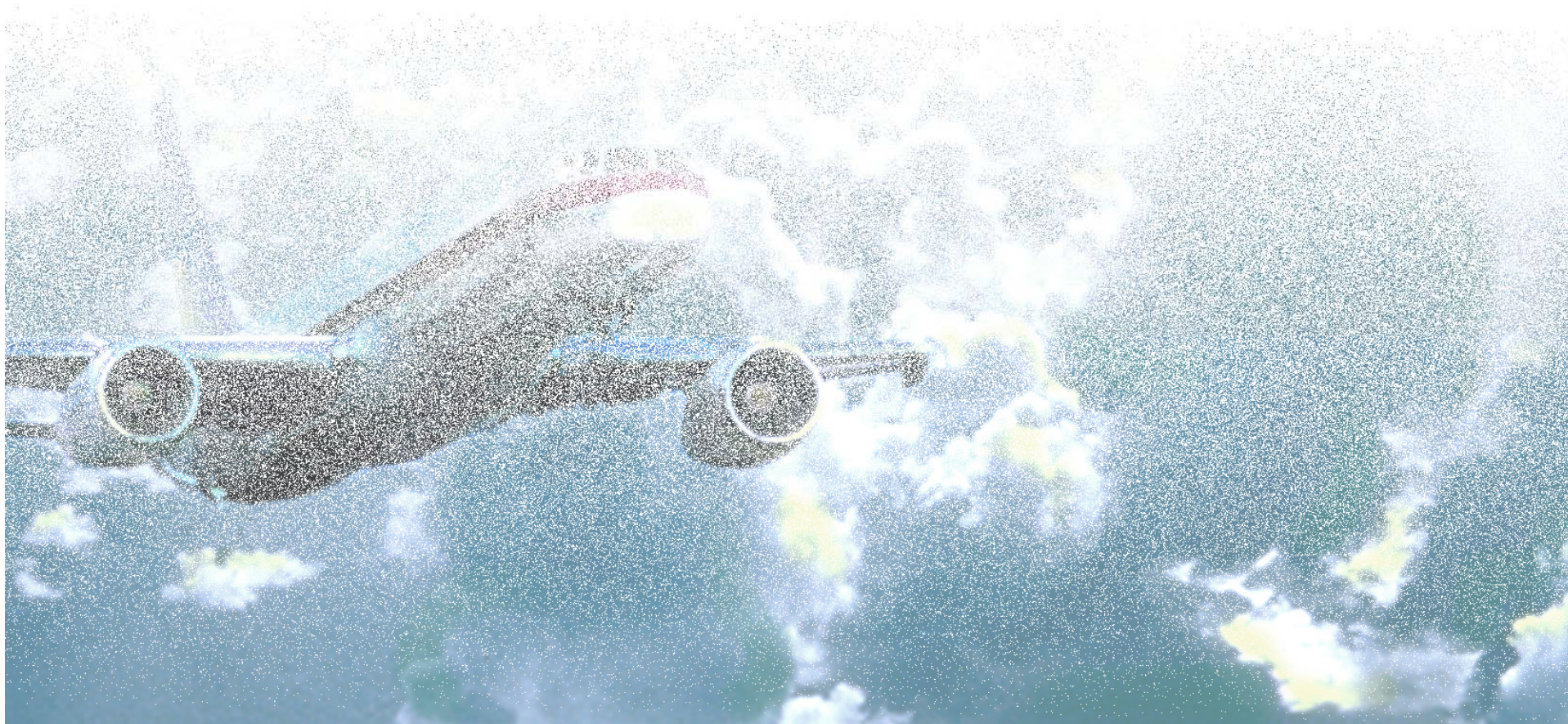
0:00:21 WEST

Disclaimer: The information contained in this web page is considered experimental and is provided for informational purposes only. Although attempts are made to make the data timely and accurate, no guarantees as to its suitability for any purpose whatsoever are made.

Connect: Contacting host: ucar.klukwan.com...

Winter Weather

Affects Aircraft In-flight and on the Ground

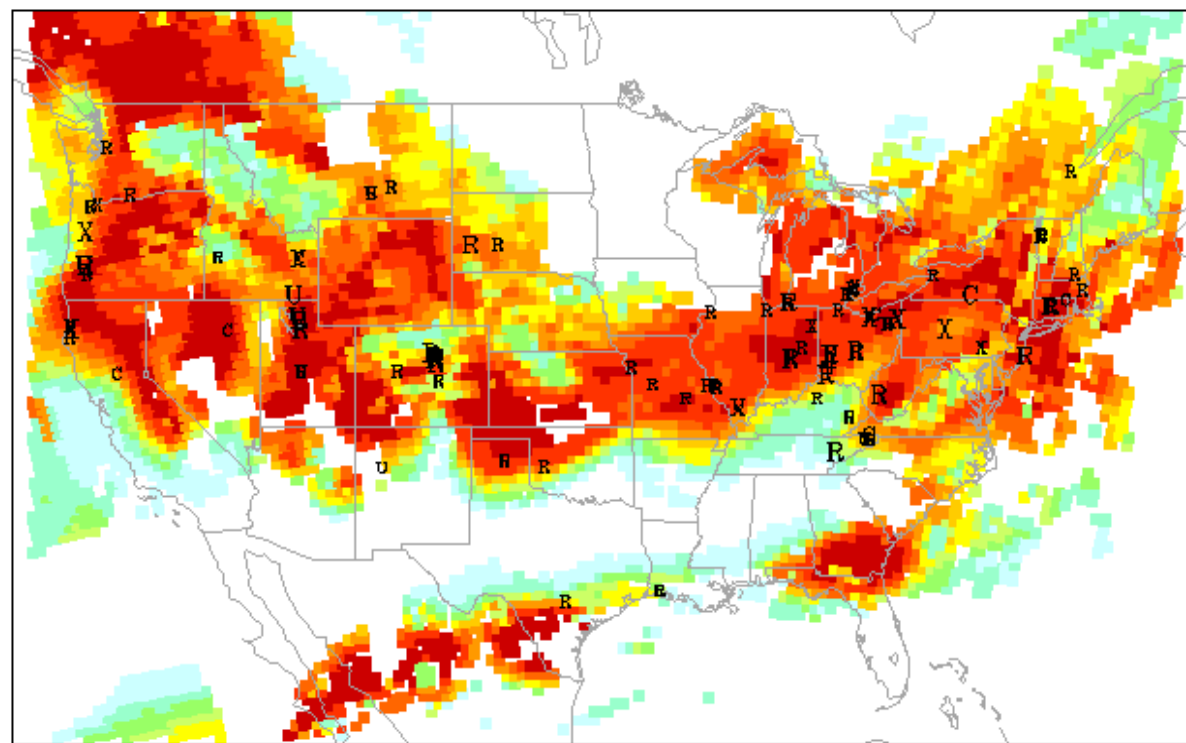


In-flight Icing Causes Dangerous Loss of Lift and Control



New Icing Product Depicts a Particularly Difficult Day

INTEGRATED ICING ALGORITHM FOR 02/11/2000 - 16 Z
MAXIMUM POTENTIAL FOR ICING IN COLUMN
EXPERIMENTAL PRODUCT - RESEARCH USE ONLY!



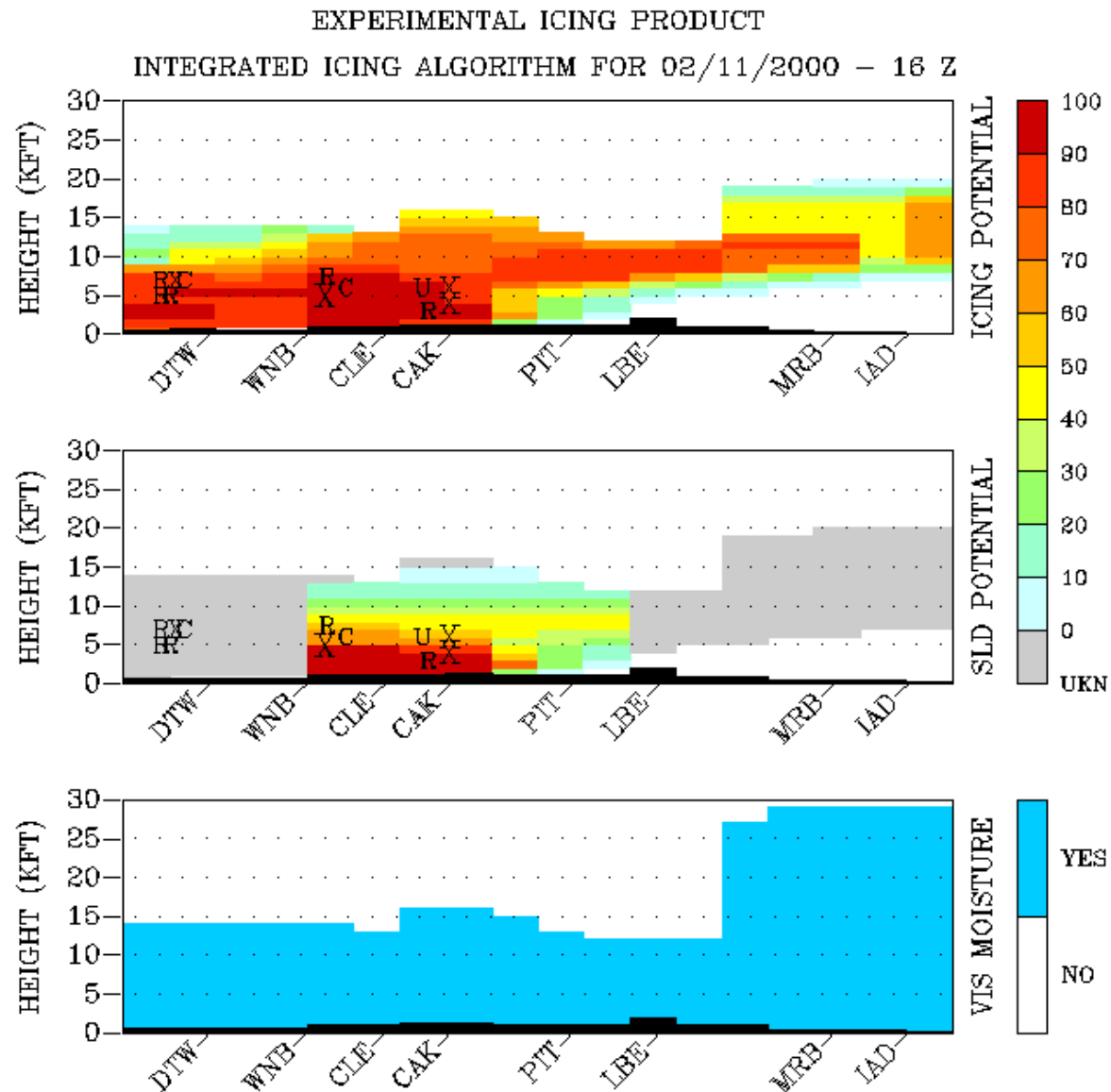
0 10 20 30 40 50 60 70 80 90 100

ICING PILOT REPORT INDICATORS

C = Clear Icing
X = Mixed Icing
R = Rime Icing
U = Unknown Icing Type

MOD/SEV to SEV = Large Font
LGT/MOD to MOD = Medium Font
TRC to LGT = Small Font

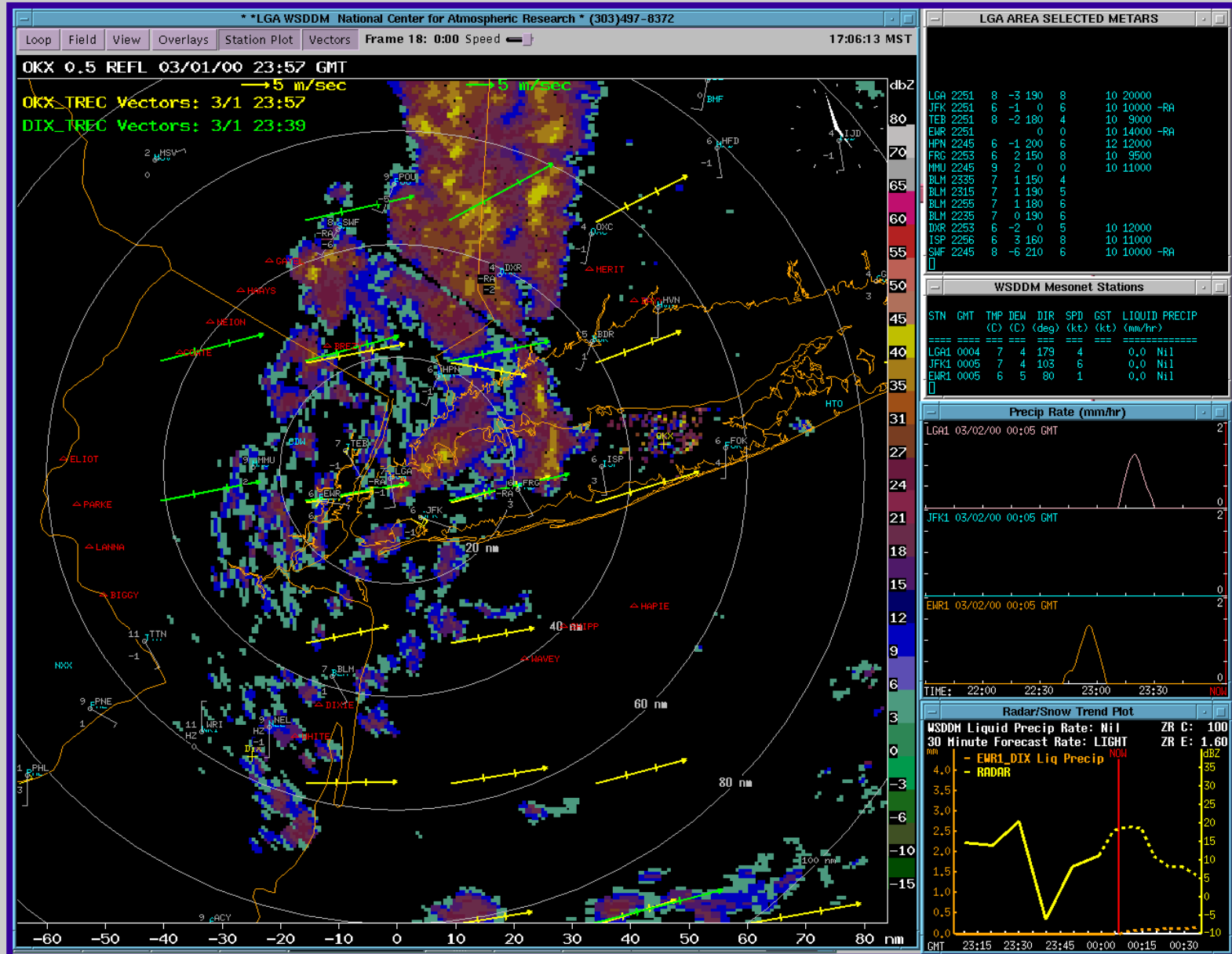
Even on a Bad Day, Vertical Cross-Section Helps Provide Safe Operations



To Depart Safely, Aircraft Must Be Free of Snow and Ice



Safe and Efficient Deicing is Facilitated by New Decision Support System



Ceiling and Visibility

Contributes to General Aviation
Accidents and Air Carrier Delays

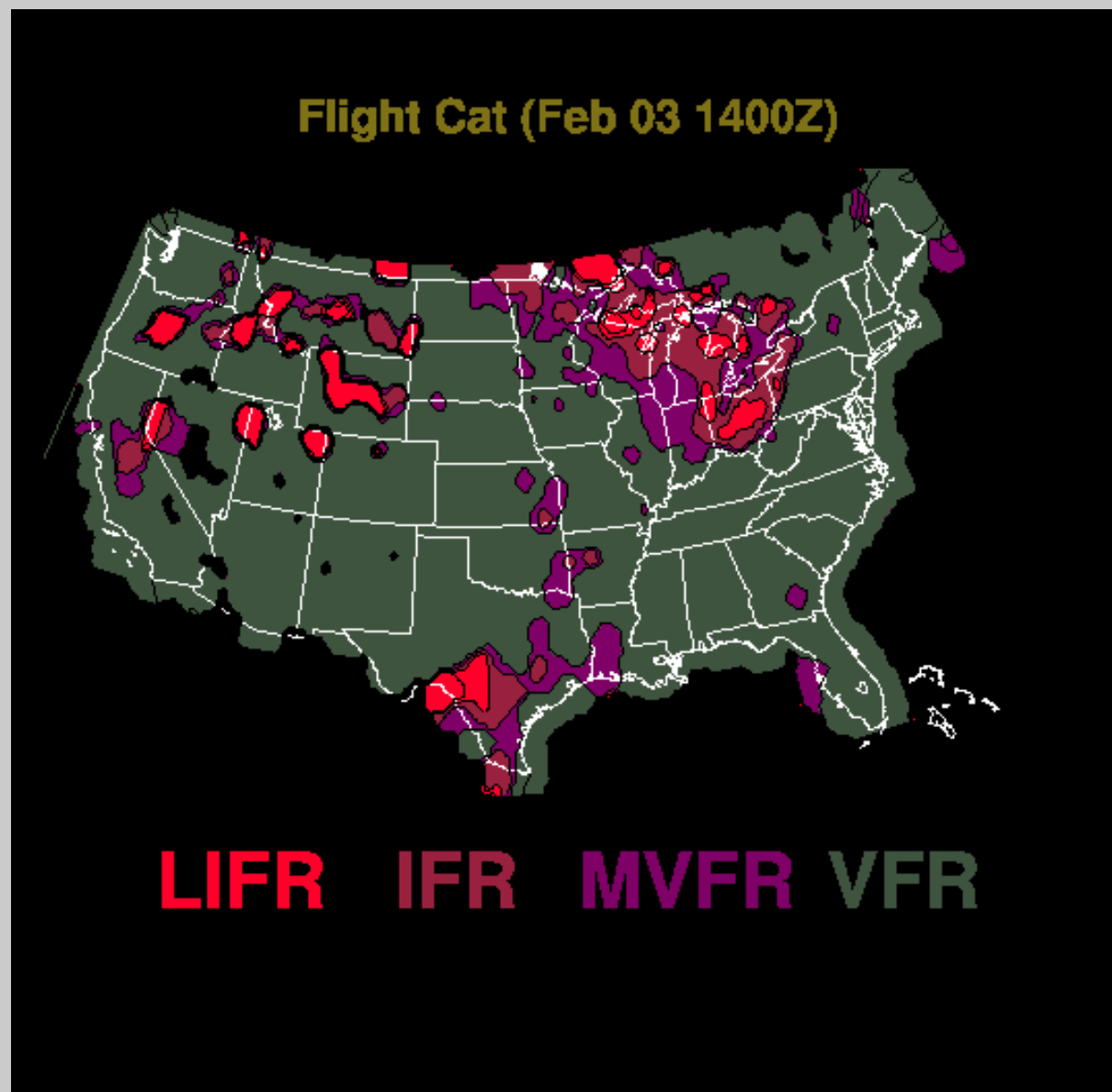


Air Carriers at San Francisco Are Regularly Impacted by Low Ceiling and Visibility



Darin Bishop

General Aviation Ceiling and Visibility Problems Are More Route Oriented

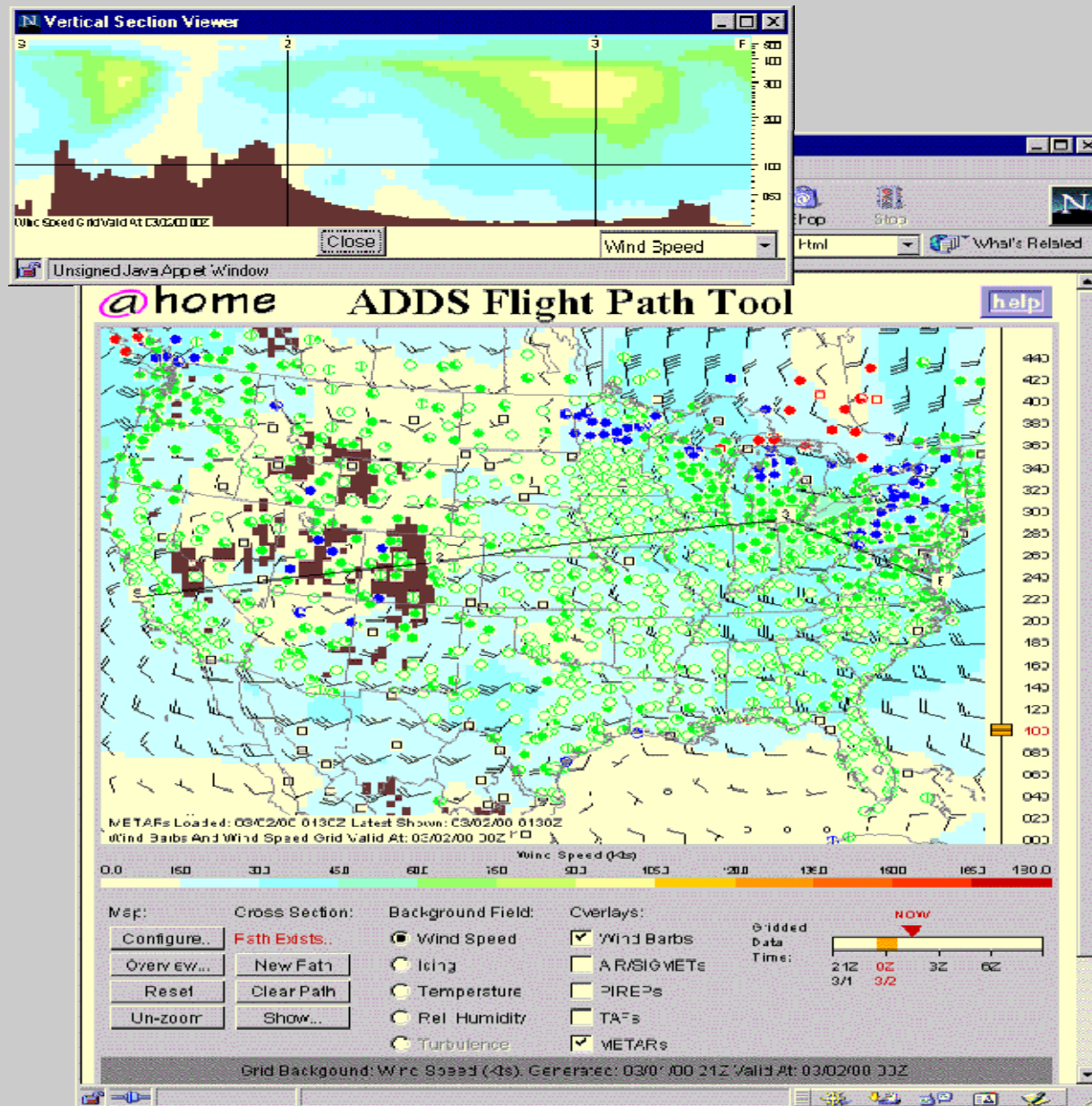


Information Dissemination

**Is a Key to Improved Weather
Decision Making**



The Internet Provides a Powerful Path to Make the Best Weather Tools Available to Aviation Users





General Aviation Users Are Already Beginning to Have Improved Cockpit Decision Aids

